Project Details

ROSES ID: NNH07ZDA001N
Selection Year: 2008
Program Element: Independent Investigation: LWS

Project Title:
Coronal Mass Ejection Data Products for LWS Science

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Summary:
The primary objectives of this proposal are: (1) To develop, maintain and distribute value-added data products on coronal mass ejections (CMEs) for the use of the LWS science community, and (2) To use these data products to study the variability of CME rate to characterize their consequences in terms particle radiation hazard and plasma impact hazard, collectively known as geoeffectiveness. This effort has an important element of enabling science activity in the Living with a Star community to help achieve the objectives of the LWS program. The scientific objectives of the proposal will be achieved through analysis of the existing and future data from NASA missions and accumulating the data products into a CME catalog, which is currently the premier data base, serving thousands of heliophysicists worldwide. The catalog helps study every phase of solar eruptions from the Sun, ranging from the origin at the Sun, to the bumpy interplanetary propagation, to impacting planets (especially Earth where we live). A complete, authentic and standardized source of information on solar disturbances is essential for theoretical efforts, model development, and the analysis and interpretation of past and present data so that LWS science can be advanced as a community effort. The proposed work is directly relevant to the Living With a Star Targeted Research and technology program because the data products are essential for testing models that are being developed under this program. The proposed tasks will involve graduate students, who might eventually become part of the LWS science community.

Publication References:

Summary: "

Reference: Natchimuthuk Gopalswamy / Goddard Space Flight Center - Coronal Mass Ejection Data Products for LWS Science